

REMARKS/ARGUMENTS

In the Office Action mailed March 17, 2007 designated "Final", claims 1-14 and 16-43 were rejected. Claim 33 was objected to as to form and was rejected under Section 112, first paragraph, for "carriage return" text in the claim. Claim 38 was rejected under Section 112, second paragraph, for antecedent basis. Substantively, the claims were rejected over Harrow (U.S. Publication No. 2003/0009518) in combination with one or more of Maier (U.S. Pub. No. 2001/0044748), Dutta (U.S. Pub. No. 2003/0050966), Vronay (U.S. Pub. No. 2004/0254928), Dar (U.S. Pub. No. 2003/01544236), Eldreth (U.S. Pat. No. 6,292,800), Garimella (U.S. Pub. No. 2005/0015415).

Amendments to the independent claims are presented in this Amendment After Final, which is filed with an accompanying Request for Continued Examination (RCE). It is respectfully asserted that the combination of Harrow and Maier is not appropriate, would not be successful, and would not provide the invention recited in the amended claims. It is further asserted that none of the other citations make up for the deficiencies of Harrow and Maier. Thus, the claims as amended by this Amendment After Final are not rendered obvious by any combination of the references. Entry of this Amendment After Final per the accompanying RCE, and further examination of the application, as amended, are requested.

Claim Amendments

Claims 33 and 38 have been corrected in view of the comments in the Office Action as to form. The features of claims 8, 11, 12, and 13 have been incorporated into claim 1, and therefore claims 8, 11, 12, and 13 have been canceled. The features of claims 21, 22, 23, and 24 have been incorporated into claim 17, and therefore claims 21, 22, 23, and 24 have been canceled.

Claimed Invention

The invention is directed to reducing movement of data between application systems that are connected to database (SQL) systems over local networks. The data requested by SQL queries from applications can be quite large, and the network connection can become a bottleneck for working with large amounts of data. The claims relate to a SQL database query

system in which results from SQL database queries are stored in a storage system as a file at an address so that query providers who request SQL searches on a database can retrieve SQL results from a connection that is independent of the query provider-database connection. Taking claim 33 as an example:

33. In a system having a query provider which provides SQL database queries to a database system connected to the query provider by a first connection over a network, the query provider and the database system being each coupled to a storage system via different paths, a method of returning results to the query provider, a method comprising:

storing results from SQL database queries made to the database system in the storage system as a file at an address which can be accessed separately by the query provider via a second connection independent of the network and by the database system via a third connection independent of the network; and

sending the address of the results in the storage system via the first connection over the network to the query provider.

All of the independent claims relate to SQL queries and second data paths or second data connections for storing SQL query results to be accessed by a query provider. In this way, data traffic for large amounts of retrieved data can be avoided, thereby reducing the network bottleneck.

For example, claim 30 is a system claim that includes the second data path for storing SQL query results to be retrieved by the query provider:

30. A system for enabling queries to a database to be processed comprising:
a database system;

an application system for providing SQL database queries to the database system coupled to the application system via a first connection over a network, the application system including a database access system, and the database system including a gateway system;

a storage system having a volume to store results from SQL database queries made to the database system;

a first data path to provide a data connection between the storage system and the application system, wherein the application system can directly access query results on the storage system without communicating via the first connection;

a second data path to provide a data connection between the storage system and the database system, wherein the database system directly stores query results to the storage system via the second data path without communicating via the first connection; and

the database access system including a request path selector for selecting a request path over which to send data comprising the SQL database queries made to the database system, the request path selector selecting from among at least the first connection over the network or the first data path between the application system and the storage system;

wherein, when the request path is chosen to be the storage system, the query data are sent to the storage system as a file and an address in the storage system for the file is provided to the database system using the first connection; and

wherein the file has associated therewith a key and the key is used to control access to the results, and also has associated therewith a flag to indicate status of the file, and the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted.

Thus, claim 30 also relates to a second data path for storing SQL query results to be retrieved by the query provider.

The Substantive Rejections— Harrow and Maier

In the pending Office Action, claims 30, 33, and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Harrow (U.S. Publication No. 2003/0009518) in view of Maier (U.S. Publication No. 2001/0044748). It was asserted in the Office Action that Harrow shows all the claim features except for the application system, storage system, and database access system involving SQL database queries. Maier was cited for teaching such features as SQL database queries.

Harrow does not relate to a database query system, much less the claimed SQL database query system. Rather, Harrow describes a peer-to-peer system in which clients share files (Fig. 5, Paragraph [0039]). In Harrow, a file server 522 provides files to requesting clients (e.g., client 504-P in Fig. 5) or coordinates their download and delivery from a client. It should be clear that files are requested according to file names or network locations and the like. Those skilled in the art will recognize that a file sharing system that provides entire files to clients has nothing to do with a database query application in which database tables are scanned according to a query and data values matching the query are extracted from the database and returned in response to the query.

As noted in Applicants' previous response, it is improper to interpret Harrow's file server 522 or directory server 502 as a database application that receives SQL queries. It is submitted that those skilled in the art would appreciate that Harrow's file server system is not relevant to the features of the claimed SQL database query system.

Harrow involves alternate data paths because Harrow wants to accommodate portable clients such as portable computers or PDAs. Files can be retrieved from peer devices (clients) or from file servers. It is submitted that such considerations are unrelated to data extracted from database tables in response to SQL queries.

Lack of Obviousness

It is submitted that combination of Harrow's file server with Maier's SQL system does not provide a *prima facie* case of obviousness.

Improper Combination

Firstly, it is submitted that Harrow and Maier are not properly combined. As noted, Harrow's file server system with alternate file download paths has nothing to do with Maier's SQL system. A file server system supports sharing of data files. A SQL system supports processing of SQL queries for extraction of responsive data from tables. Harrow relates to connecting portable devices so they may share data files in spite of their relative data path changes. Maier is unrelated to such concerns.

Incompatible Operation

Secondly, the proposed combination would not function as intended, because the peer device file transfer system of Harrow is incompatible with the SQL data retrieval system of Maier. That is, a SQL database system involves a query processor and query providers that communicate with the processor. Such a system does not envisage peer processing. Thus, there is no suggestion for combining Harrow and Maier. It is asserted that any combination of the two would require picking and choosing from among the respective disclosures using impermissible hindsight reconstruction.

Lack of Claim Features

Lastly, even if the teachings of the two publications could be combined, the combination would not provide the claimed features. Harrow describes providing alternate paths for file retrieval by peer portable devices. Maier is not related to peer-to-peer file retrieval at all.

The Office Action asserted that a file server has storage capabilities and teaches a database system (page 79 of Office Action). The Office Action also asserted that, because Harrow's client can determine the path over which a requested file may be sent, Harrow teaches the invention. These assertions are respectfully disputed. The claims, as currently amended, recite much more than a client determining a download path.

A SQL system processes queries so as to extract data from a table and return the extracted data to the query provider. That is, a SQL system does not retrieve files, it retrieves data out of tables that satisfy a query. In contrast, the amended claims recite a SQL system that permits query results to be retrieved as a file independently of the query provider-database connection and operates for, per claim 33, "storing results from SQL database queries made to the database system in the storage system as a file at an address which can be accessed separately by the query provider via a second connection independent of the network and by the database system via a third connection independent of the network."

Claim 30 recites similar operation in which query results are extracted and returned such that "when the request path is chosen to be the storage system, the query data are sent to the storage system as a file and an address in the storage system for the file is provided to the database system using the first connection." In addition, claim 30 recites that "wherein the file has associated therewith a key and the key is used to control access to the results, and also has associated therewith a flag to indicate status of the file, and the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted." A file retrieval system such as Harrow has no need for such considerations. All of the independent claims, as amended, contain similar features. These features would not be provided by an combination of Harrow and Maier.

Thus, it is submitted that the proposed combination of Harrow and Maier is improper, would not be successful, and does not provide the claimed features. Therefore, the proposed combination does not present a *prima facie* case of obviousness, and as a result, claims 30, 33, and 37 are not rendered obvious.

Combination of Harrow, Maier, and Dutta et al.

The remaining claims comprising claims 1-14, 16-29, 31, 32, 38, 41, and 42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Harrow in view of Maier, and further in view of Dutta (U.S. Publication No. 2003/0050966) and one or more of Vronay (U.S. Pub. No. 2004/0254928), Dar (U.S. Pub. No. 2003/01544236), Eldreth (U.S. Pat. No. 6,292,800), Garimella (U.S. Pub. No. 2005/0015415). These rejected claims likewise recite

features specific to SQL processing of extracted data, such as returning query results so that "when the request path is chosen to be the storage system, the query data are sent to the storage system as a file and an address in the storage system for the file is provided to the database system using the first connection", and "wherein the file has associated therewith a key and the key is used to control access to the results, and also has associated therewith a flag to indicate status of the file, and the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted."

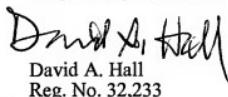
Like Harrow, Dutta does not relate to SQL systems and instead relates to file sharing systems. As such, Dutta does not make up for the deficiencies of Harrow. It is submitted that none of the other cited references make up for the deficiencies, and would not provide the missing claim features. Therefore, it is submitted that claims 1-14, 16-29, 31, 32, 38, 41, and 42¹ are not rendered obvious by the proposed combination.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,


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¹ Claims 8, 11-13, and 21-24 will be canceled upon entry of this Amendment After Final.